

**VIRGINIA STANDARDS OF LEARNING**

**Spring 2004 Released Test**

**GRADE 5  
SCIENCE**

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**LARGE PRINT FORM**

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## DIRECTIONS

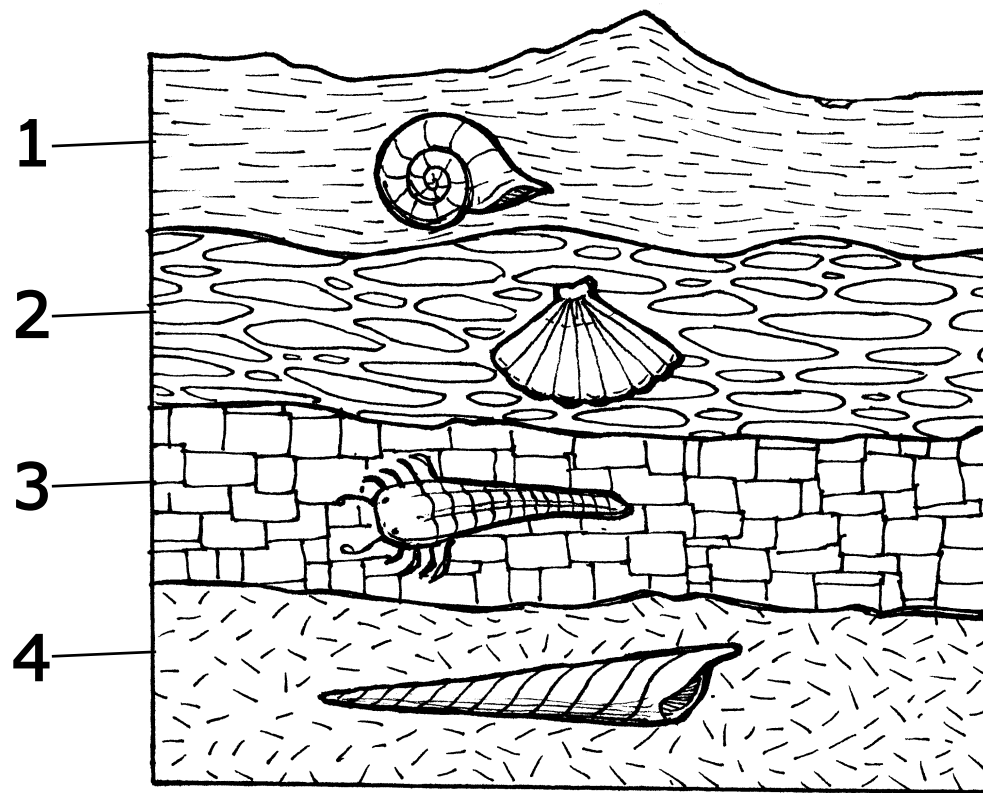
Read each question carefully and choose the best answer.

## SAMPLE

When the Earth is seen from outer space, it looks mainly blue. This is because most of the Earth is covered with

- A ice
- B mountains
- C oceans
- D deserts

1



The diagram shows layers of sedimentary rocks and examples of their fossils. Which layer contains the oldest fossils?

- A 1
- B 2
- C 3
- D 4

## 2 Which of these is NOT a plant?

F



G



H



J



3 The energy used to move most bicycles is an example of what type of energy?

- A Electrical
- B Mechanical
- C Chemical
- D Nuclear

4 How is a fish different from a jellyfish?

- F A fish has a backbone.
- G A fish is in the animal kingdom.
- H A fish can reproduce.
- J A fish lives in water.

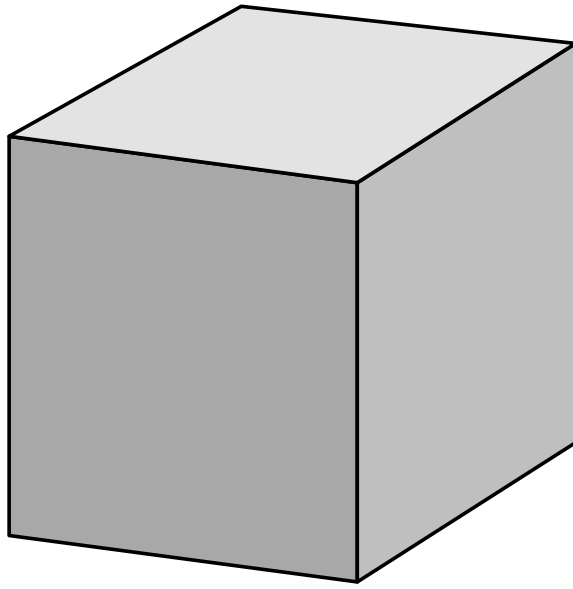
5

Rain, Snow, Sleet

Which weather term best describes the words above?

- A Humidity
- B Atmosphere
- C Precipitation
- D Barometric pressure

6



Which tools would be needed to measure the size and the mass of a block of wood?

- F A watch with a second hand and a ruler
- G A graduated cylinder and a thermometer
- H A ruler and a balance
- J A thermometer and a meter stick

7 Which causes rocks in a stream to be smooth?

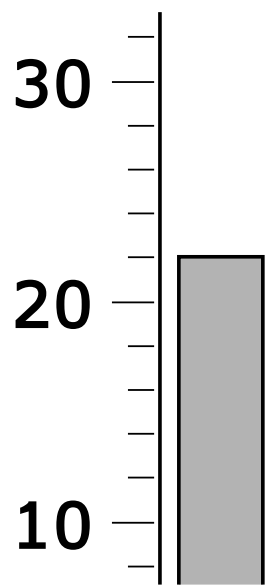
- A Weathering
- B Air currents
- C Earthquakes
- D Movement of fish

8 During a thunderstorm, you see the lightning before you hear thunder. This is because

- F light has a greater mass than sound
- G sound has longer wavelengths than light
- H light travels faster than sound
- J sound and light travel at the same speed



9



The picture shows a thermometer in a room. What is the temperature of this room?

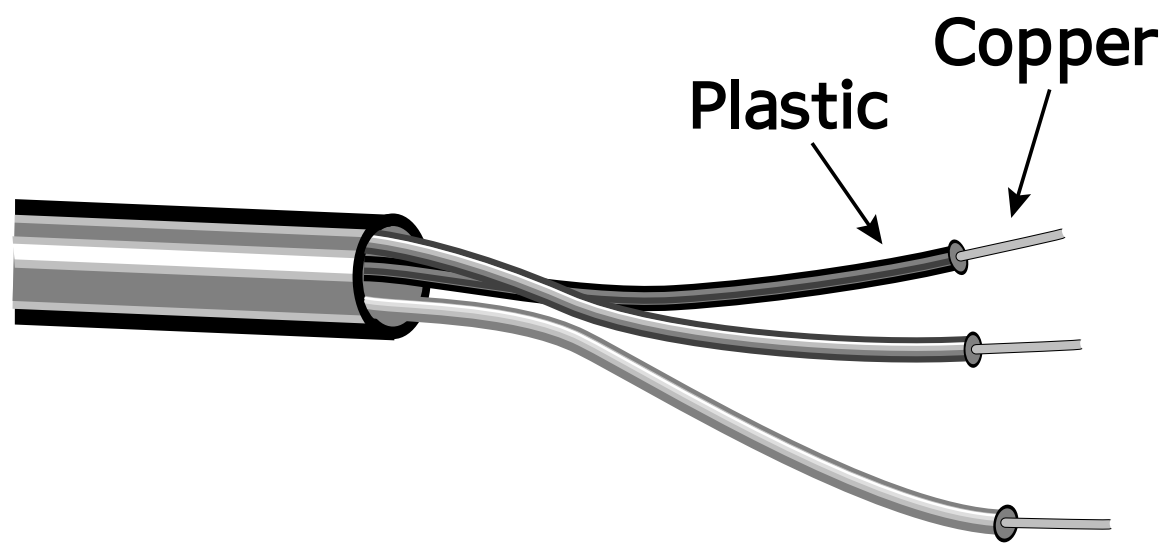
- A 19°C
- B 20°C
- C 21°C
- D 22°C

**10 The black widow spider is common to Virginia’s ledges, rocks, and plants. Why are these spiders important to the balance in nature?**

- F They poison other animals.**
- G They are harmless to people.**
- H They eat plants.**
- J They help control some insects.**

**11 What will happen if the lid is removed from a container that holds helium gas?**

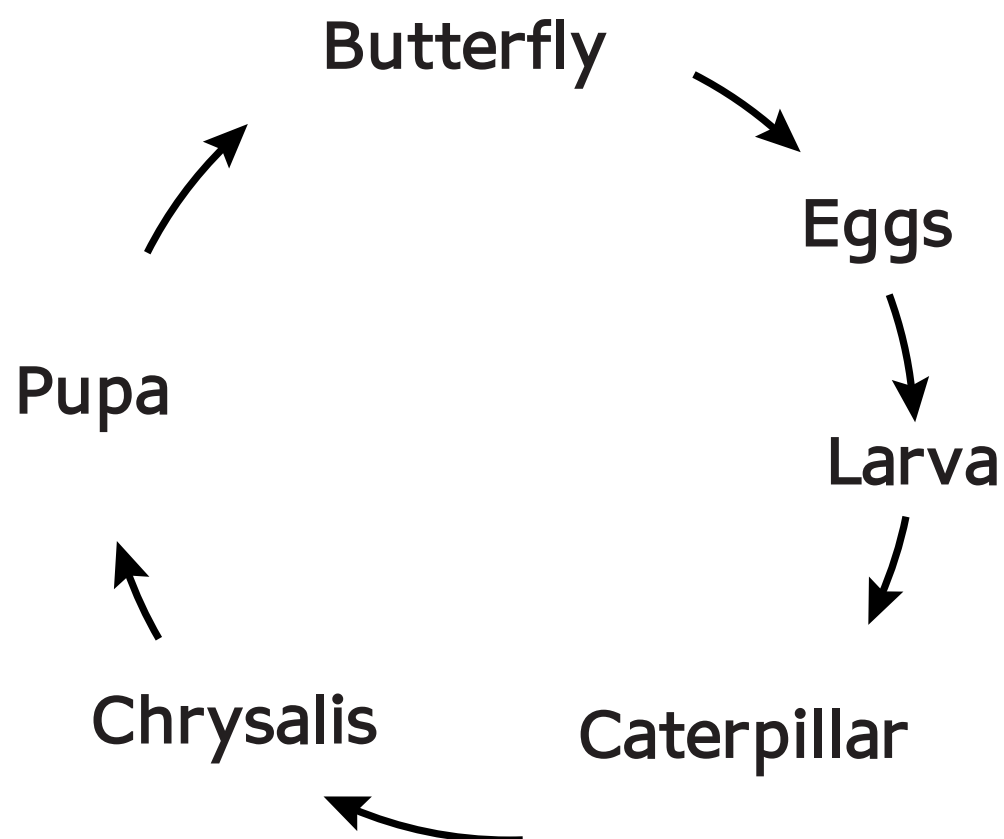
- A The gas will expand and escape from the container.**
- B The gas will slowly change back into a liquid.**
- C When light hits the gas, it will change colors.**
- D Gravity will keep the gas in the container.**



Many electrical wires are wrapped with a plastic coating because plastic is

- F less expensive than steel
- G more dense than copper
- H able to keep its shape
- J a good insulator

## Butterfly Life Cycle



During certain stages of a butterfly's life cycle, the butterfly helps plants by pollinating their flowers. At other stages, it hurts plants by eating their leaves. At what stage in the butterfly's life cycle does it eat the **MOST** plant leaves?

- A Eggs
- B Larva
- C Chrysalis
- D Butterfly

14 People put sugar in their tea to make it sweet. The sugar will dissolve fastest when the tea

F is hot

G is cold

H is in a tall glass

J has lemon in it

15 The ocean floor

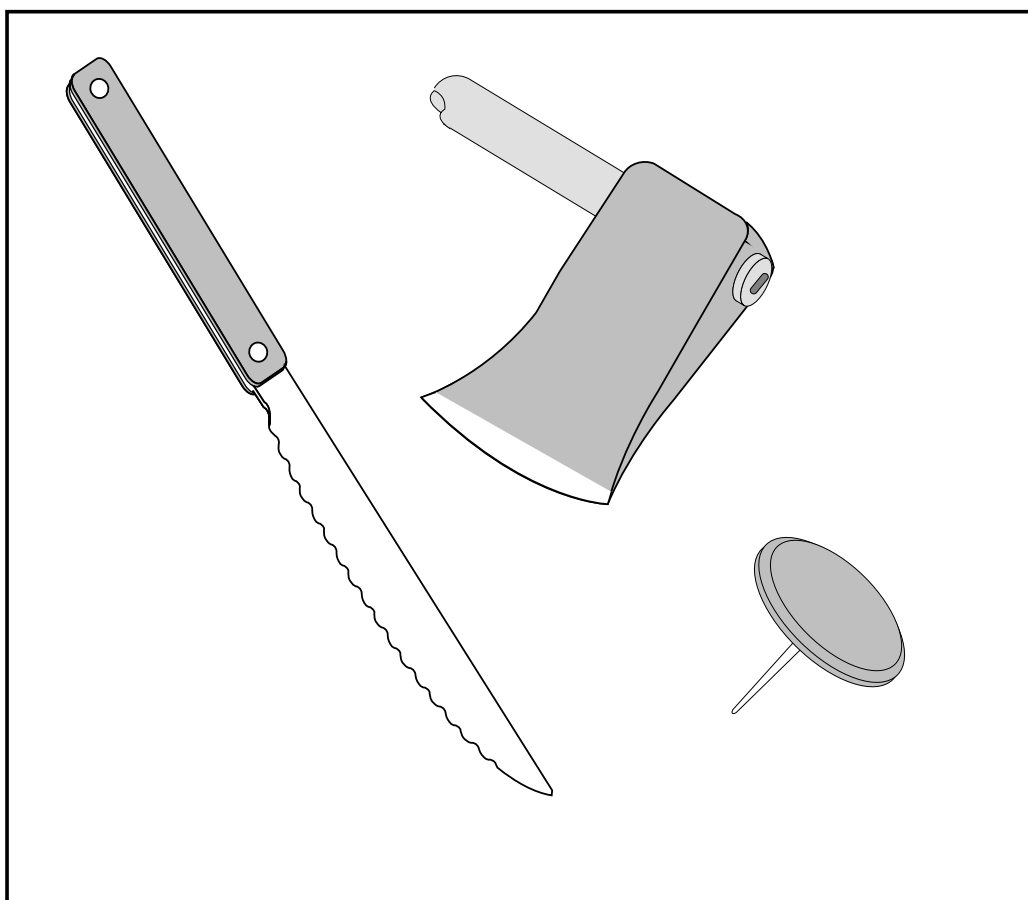
A is always a flat bed of sand

B has mountains, plains, and ridges like land surfaces

C is covered by the same amount of water everywhere

D covers less area than the land

16



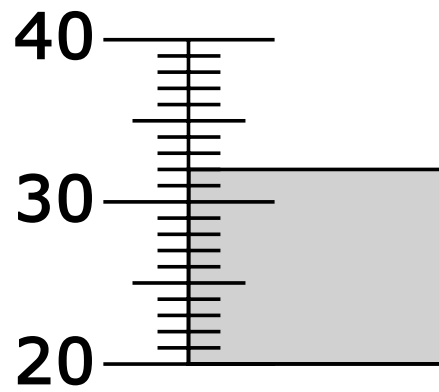
Each of these simple machines contains a

F wheel and axle

G lever

H pulley

J wedge



If 5 milliliters of vinegar are added to the water in the cylinder, what will be the total volume of the liquid?

- A 30 milliliters
- B 27 milliliters
- C 37 milliliters
- D 35 milliliters

## Approximate Surface Gravity of Some Planets Compared to the Earth

Planet	Surface Gravity
Mercury	0.38
Venus	0.90
Earth	1.00
Mars	0.38
Jupiter	2.53

The larger the mass of a planet, the greater the pull of gravity on that planet's surface. According to the information in the chart, which of these planets has a mass closest to the Earth's mass?

- F Mercury
- G Venus
- H Mars
- J Jupiter

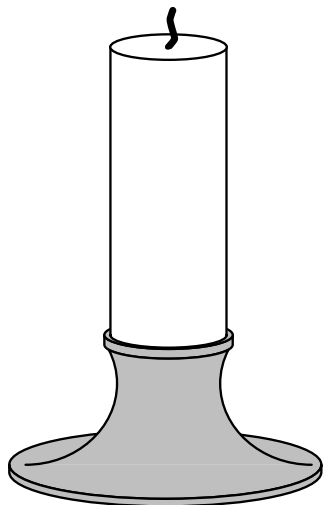


19 The magnetic fields of any magnet are **GREATEST**

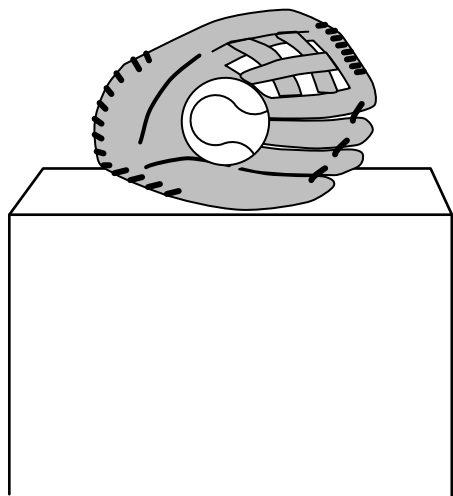
- A around the middle
- B around the poles
- C around only the south pole
- D around only the north pole

20 Which of these best shows kinetic energy?

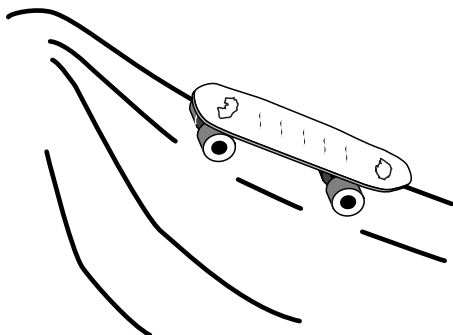
F



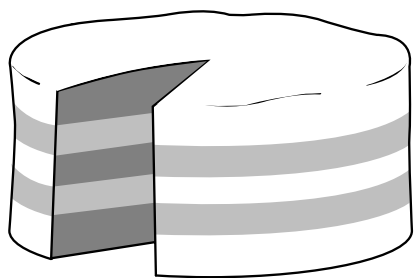
G



H



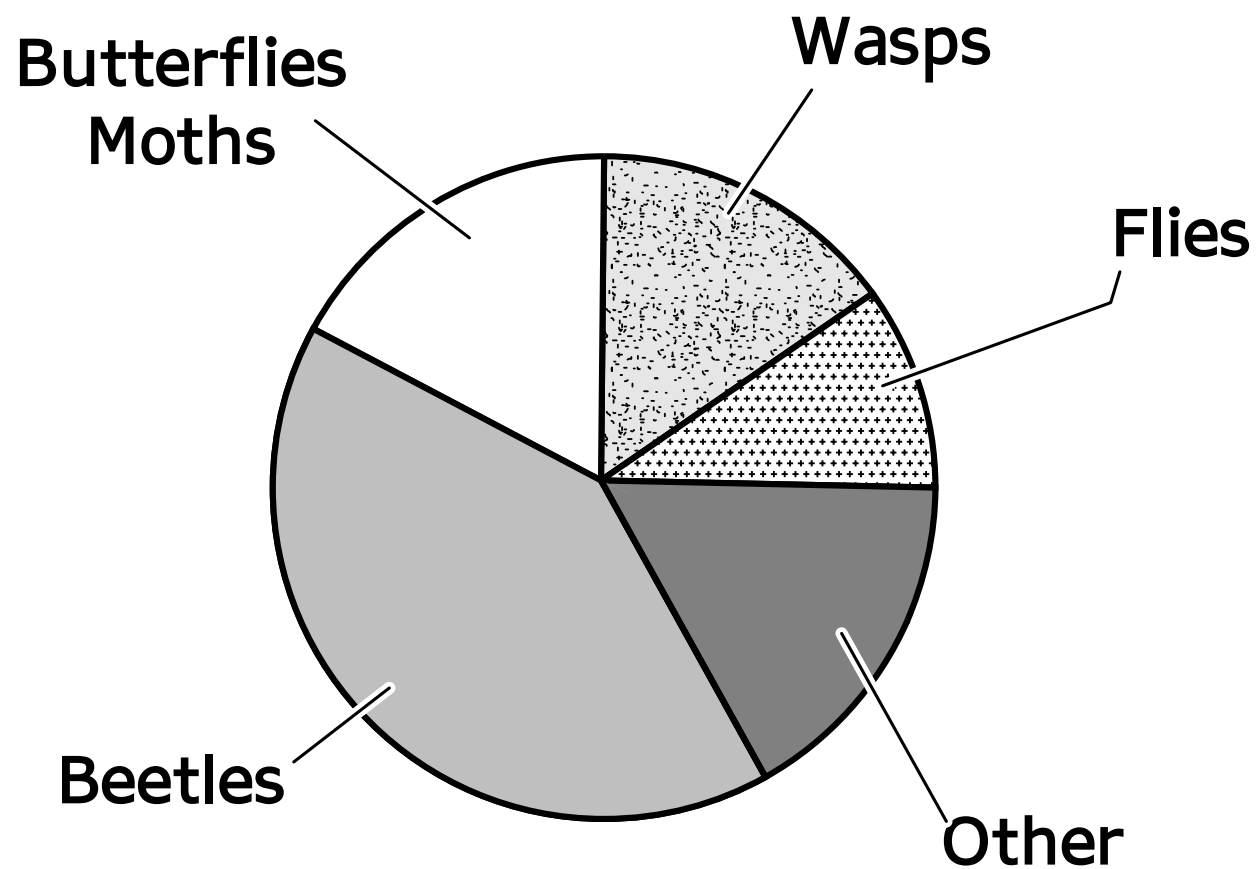
J



21 Which of these is NOT considered ocean pollution?

- A Dumping garbage
- B Artificial reefs
- C Oil spills
- D Chemical runoff

## Relative Numbers of Insects Seen

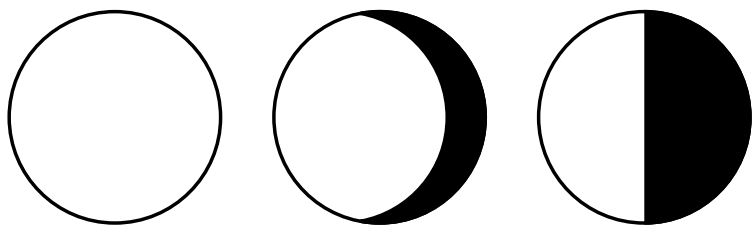


A science class went on a field trip and made a graph of the different kinds of insects that they saw. Which group of insects was seen the most?

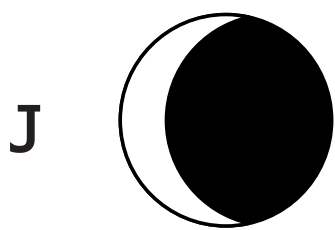
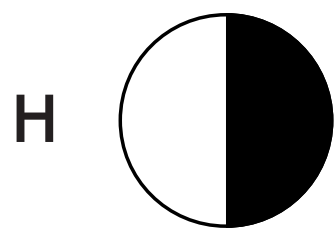
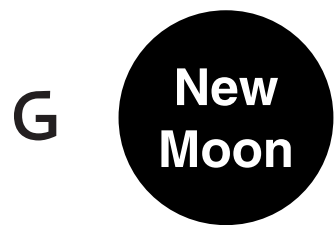
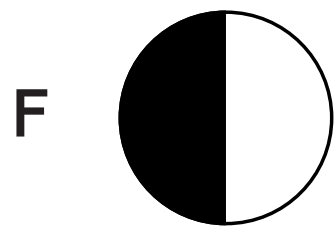
- F Beetles
- G Butterflies/Moths
- H Flies
- J Wasps

23 Seeds can lie dormant for many years until

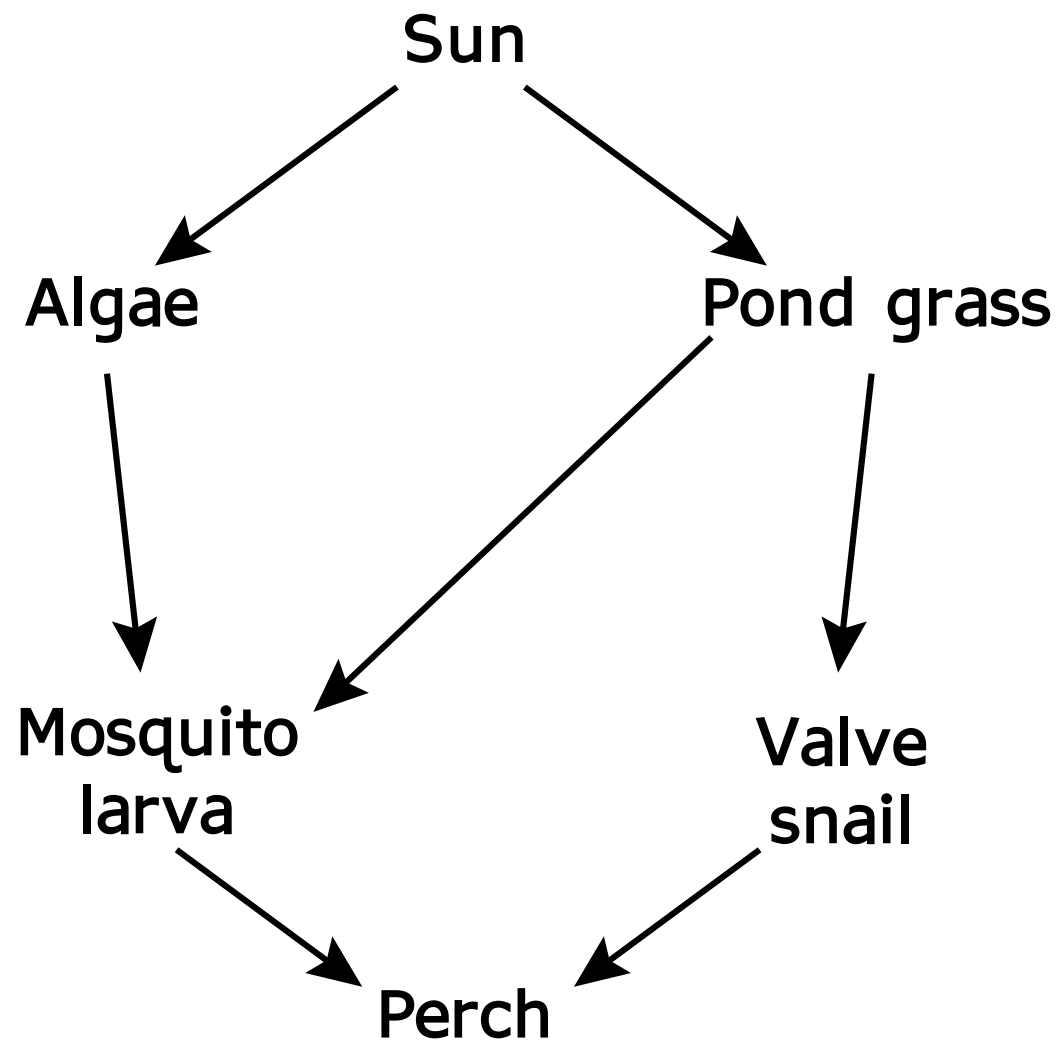
- A sunlight causes photosynthesis
- B food webs are complete
- C conditions are right for growth
- D conduction of food occurs



Which of the following is the next phase of the moon?



## Food Web



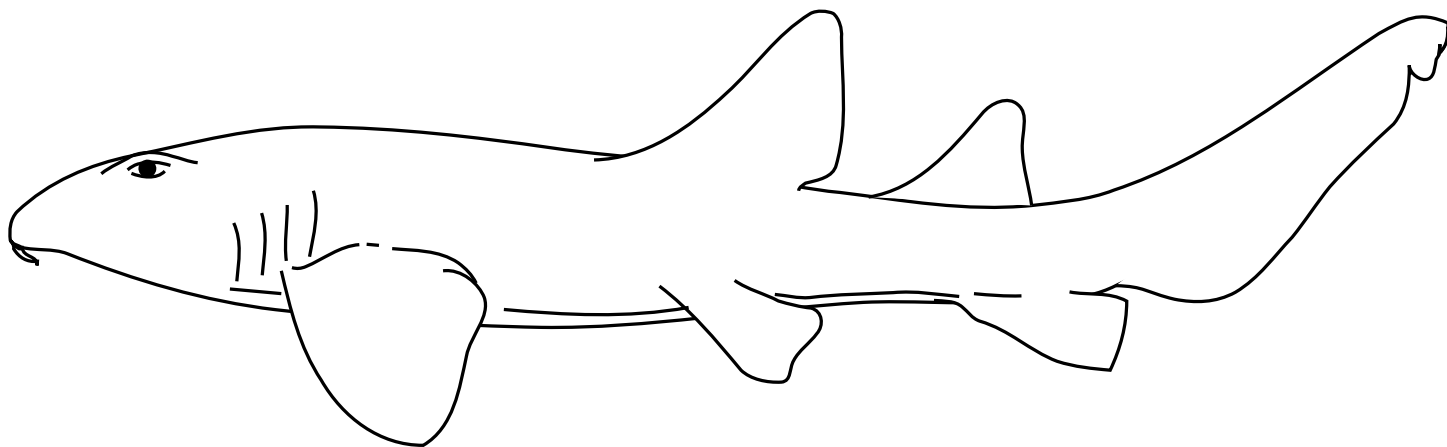
In order for energy to flow through this food web from the sun to the yellow perch, the perch must

- A live in warmer areas of its habitat
- B eat pond grass and algae
- C go through the process of photosynthesis
- D eat the valve snail or the mosquito larva

## Classification Key

26

- 1a Body kite-like in shape.....Ray  
1b Body not kite-like in shape.....Go to 2
- 2a Nose saw-like in shape.....Swordfish  
2b Nose not saw-like in shape.....Go to 3
- 3a Head extended on both sides..Hammerhead shark  
3b Head not extended on both sides.....Go to 4
- 4a Body has spots.....Leopard shark  
4b Body does not have spots.....Nurse shark



Using the picture and classification key, what is this animal?

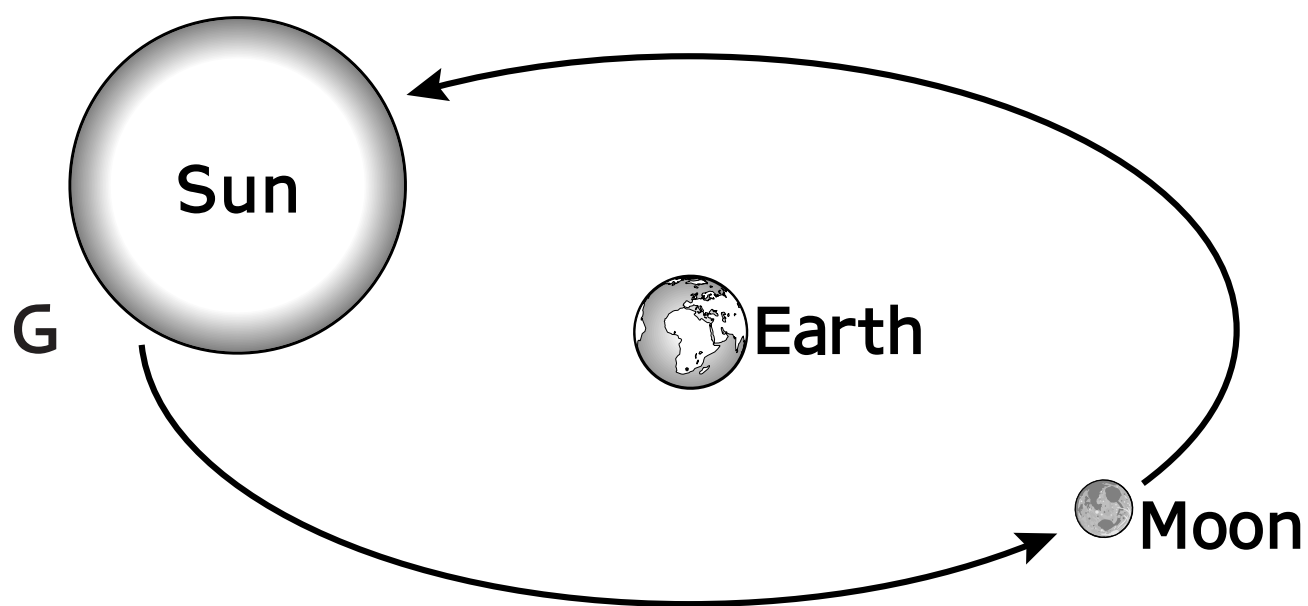
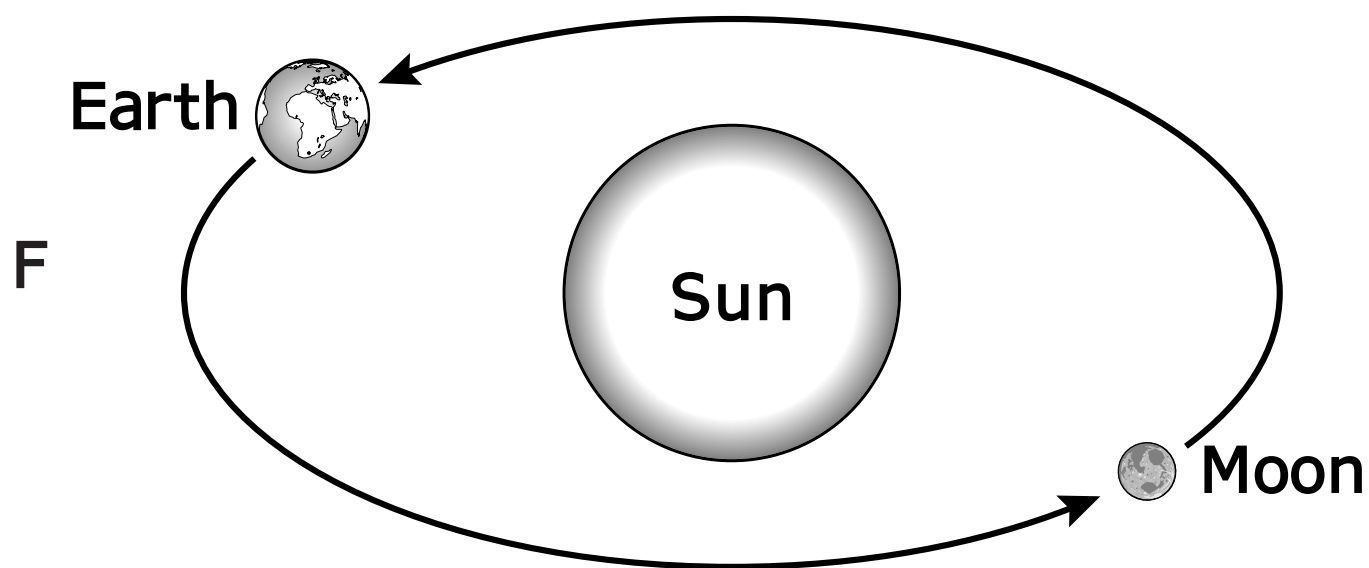
- F Swordfish  
G Hammerhead shark  
H Leopard shark  
J Nurse shark

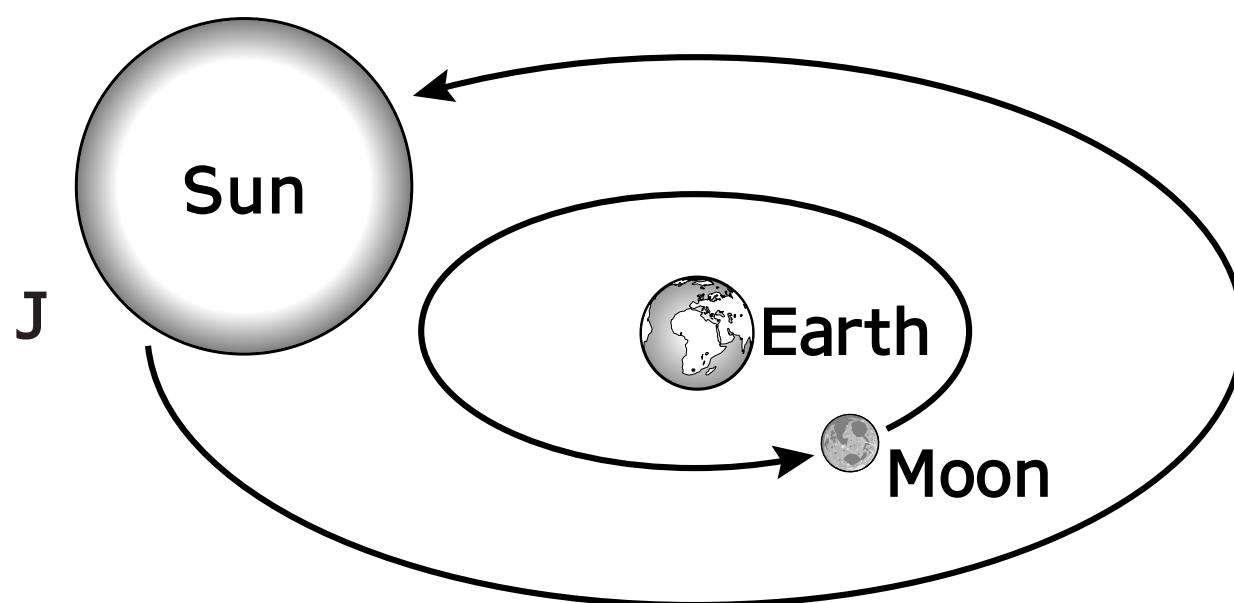
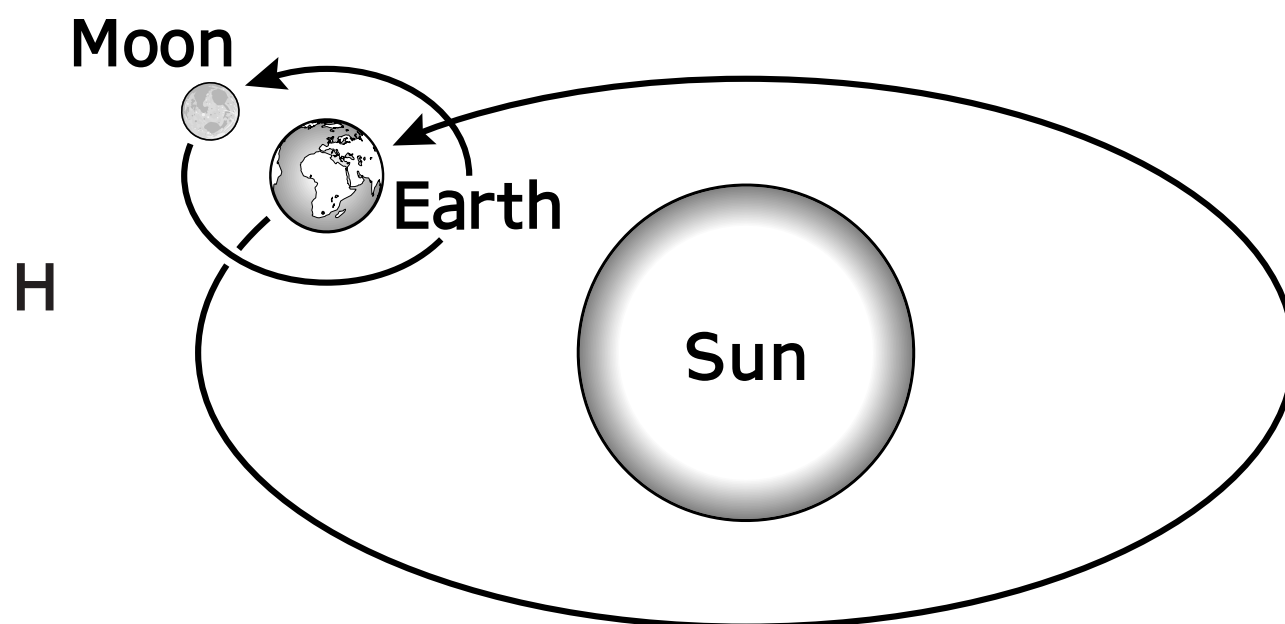


27 One way that mosses and ferns are similar is they BOTH

- A are flowering plants
- B produce spores
- C grow in areas with little rainfall
- D are dormant during the winter

28 Which of these best shows that the Earth revolves around the sun as the moon revolves around the Earth?





29 The part of a plant cell that gives the cell its green color is the

- A nucleus
- B cytoplasm
- C vacuole
- D chloroplast

30 What tool is used to measure the relative amount of water in the air?

- F A barometer
- G An anemometer
- H A hygrometer
- J A thermometer

31 Blowing through a straw will produce a sound. Which straw will make the highest pitch?



32 Trees, wild flowers, and grasses are all considered to be

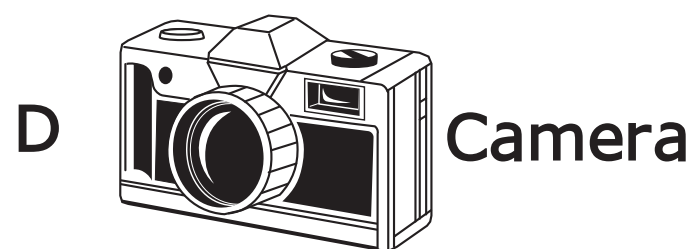
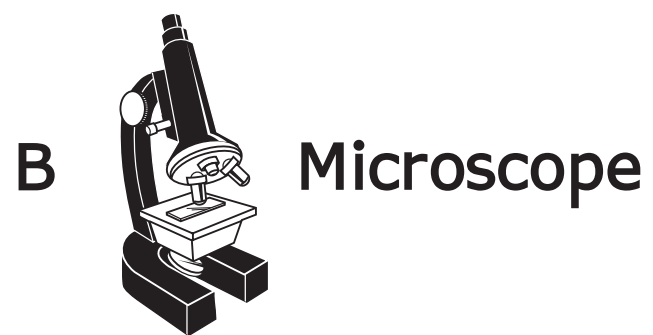
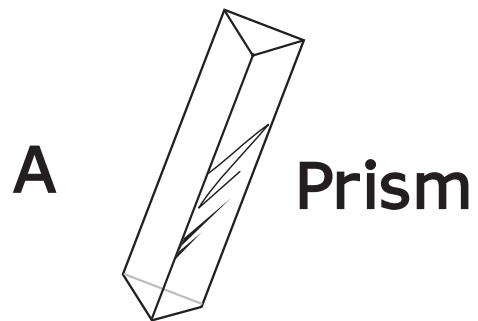
F vascular plants

G nonvascular plants

H woody plants

J nonwoody plants

33 Which tool is used to separate white light into the color spectrum?



34 Which of the following is a common plant that grows wild in Virginia?

F Orange tree

G Cactus tree

H Lemon tree

J Dogwood tree

35 During a study of the human body, students are asked to observe the back of their hands and record their observations. What units would be MOST appropriate for measuring the width of their hands?

A Grams

B Centimeters

C Liters

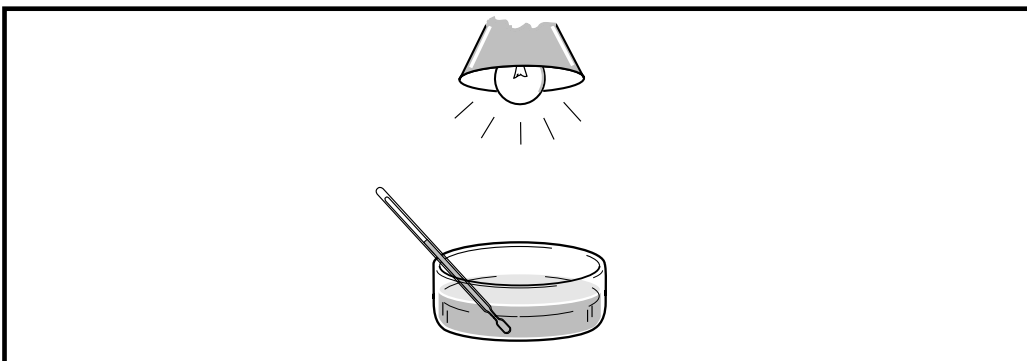
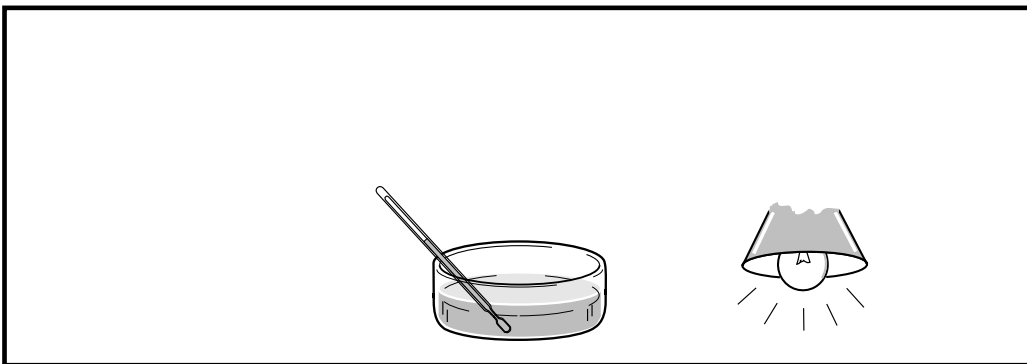
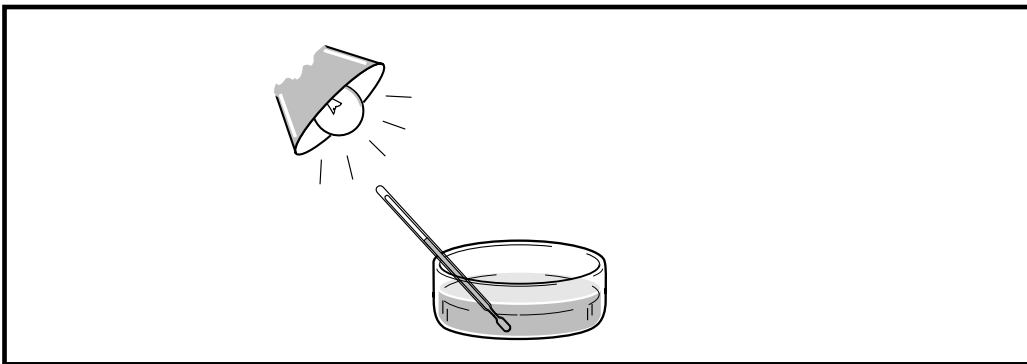
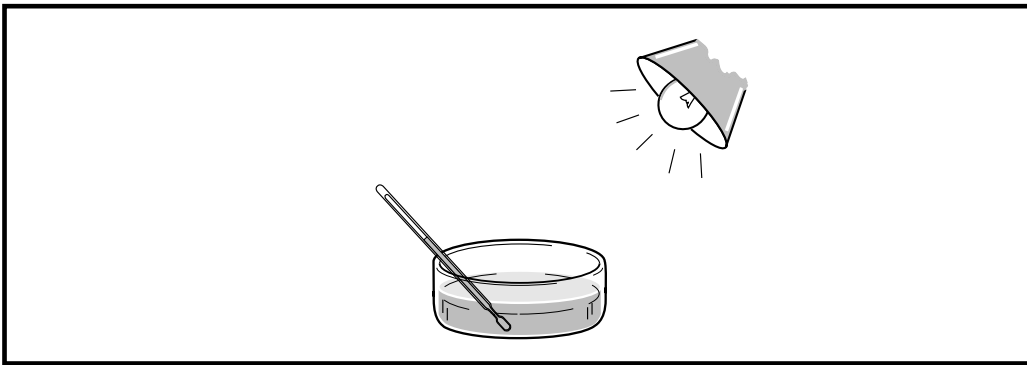
D Meters

36 Which action can be used to prevent soil erosion?

- F Planting grass
- G Raising grazing animals
- H Digging ditches
- J Spraying with water



37 The pictures below show how one student tried to see how the heat from a light bulb affected the rate of evaporation of a liquid. What is the only variable being changed in this experiment?



- A The size of the container
- B The position of the thermometer
- C The position of the light bulb
- D The amount of water

# Answer Key

Test Sequence	Correct Response	Reporting Category	Reporting Category Description
1	D	018	Earth/Space Systems and Cycles
2	G	017	Life Processes and Living Systems
3	B	016	Force, Motion, Energy, and Matter
4	F	017	Life Processes and Living Systems
5	C	018	Earth/Space Systems and Cycles
6	H	015	Scientific Investigation
7	A	018	Earth/Space Systems and Cycles
8	H	016	Force, Motion, Energy, and Matter
9	D	015	Scientific Investigation
10	J	017	Life Processes and Living Systems
11	A	016	Force, Motion, Energy, and Matter
12	J	016	Force, Motion, Energy, and Matter
13	B	017	Life Processes and Living Systems
14	F	016	Force, Motion, Energy, and Matter
15	B	018	Earth/Space Systems and Cycles
16	J	016	Force, Motion, Energy, and Matter
17	C	015	Scientific Investigation
18	G	015	Scientific Investigation
19	B	016	Force, Motion, Energy, and Matter
20	H	016	Force, Motion, Energy, and Matter
21	B	018	Earth/Space Systems and Cycles
22	F	015	Scientific Investigation
23	C	017	Life Processes and Living Systems
24	J	018	Earth/Space Systems and Cycles
25	D	017	Life Processes and Living Systems
26	J	015	Scientific Investigation
27	B	017	Life Processes and Living Systems
28	H	018	Earth/Space Systems and Cycles
29	D	017	Life Processes and Living Systems
30	H	018	Earth/Space Systems and Cycles
31	A	016	Force, Motion, Energy, and Matter
32	F	017	Life Processes and Living Systems
33	A	016	Force, Motion, Energy, and Matter
34	J	018	Earth/Space Systems and Cycles
35	B	015	Scientific Investigation
36	F	018	Earth/Space Systems and Cycles
37	C	015	Scientific Investigation





1 2 3 4 5 6 7 8 9 10 11 12 A B C D E